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Art. XLVII. — *Three Days on the Cotteswolds.*

By Jas. Buckman, Esq.

Having engaged to accompany my friend Mr. Edwin Lees, in a three days' Natural-History expedition to the Cotteswolds, towards the end of September in the present year [1841] we started on our journey, armed with vasculums, portfolios, books, hammers and bags, and under the command of General Briggs, of Cheltenham, a gentleman to whom the naturalists of this neighbourhood are much indebted for his kindness in aiding their researches, by accommodating them on such occasions as the present with the use of his carriage, so that they may arrive at the scene of their labours on the rugged hill-top or heathy moor, fresh and ready for work.

Having proceeded as far from Cheltenham as the first coach-stage on the London road, we turned to the left from Andoversford Inn, and in a short time alighted from the carriage in the very heart of the Cotteswolds, the road leading directly over the top of the hills to the ancient town of Stow-on-the-Wold. Of course we soon diverged from the road into the fields, where we duly commented on the great abundance of Campanula glomerata, Cnicus acaulis and Carlina vulgaris, which in this neighbourhood are always stout and fair, and of goodly proportions, the latter especially, as it occurs from one to two feet in height, whilst on Leckhampton, a hill nearer Cheltenham, it seldom attains more than four inches, and looks so withered and dead as to lead an inexperienced botanist into the belief that it is some ill-grown specimen of a common thistle in a state of decay; and this peculiar appearance is not entirely lost in the more luxuriant specimens, as the external scales of the involucre always present the appearance of the "sear and yellow leaf" of approaching death. That beautiful thistle, Cnicus eriophorus, is frequently met with in a most luxuriant condition on the grassy sides of these hilly roads.

Immediately on emerging from this road to the right across the fields, by a place called Slad Barn, we found some fine plants of Linaria spuria, the corollas of several specimens of which had three or four spurs; this is a curious circumstance, but one that I had before observed in specimens growing near Cheltenham in a rich cultivated soil. Some of these corollas too, instead of being lipped, were salver-shaped, with a straight upright tube. I very much regret that I did not then think of 'The Phytologist,' as all good botanists should do, or I should certainly have made a drawing of this singular kind of metamorphosis, for insertion in its valuable pages; this omission I promise to rectify on some future occasion, as the extent of change cannot be shown in the dried specimens. This Linaria is extremely common on our highest hills as well as in the vales, and is accompanied in all its habitats by the elegant little L. Elatine, and I suspect the one is derived from the other, as I have met with numberless intermediate stages; and if Linaria spuria and Elatine are to be considered distinct species, surely the specimen I have adverted to must claim to be considered as an additional one. Specularia hybrida, with Euphorbia exigua and Peplus, were found at the same spot. Onobrychis sativa formed the aftercrop of the field, from which barley was just ready to be carried; this substitution of Onobrychis for clover as an aftercrop is a somewhat novel feature in our farming.

Having crossed the road some distance farther on, we commenced tracing up a lovely hill-stream called the Windrush. At the picturesque village of Harmton it is a small brook, whose " waters flow on with a murmuring sound," and are as bright and as clear as crystal; and here we met with four species of Potamogeton,—gramineus, densus, crispus and lucens; the large beds of the three last, with their rich polished leaves, as they were agitated by the ceaseless flow of the rippling stream, under the influence of a bright sun, reflected the richest and most varied tints imaginable. The Potamogetons are comparatively rare with us, on account of our great paucity of water. In this brook we also found another plant of rare occurrence in this district, —Poa aquatica. Just before we left the road to explore the brook, our attention was arrested by the sight of two large trees of Pyrus Aria, which were then in fine fruit. This tree gives quite a characteristic feature to all the Cotteswold woods, the bright silvery leaves contrasting beautifully with the dark green of summer and the rich yellow and brown tints of autumn; but owing to the practice of annually clearing away a portion of underwood, with which this tree is generally doomed, it is rare to find a specimen in flower; and it is not until one meets with a venerable tree in some retired nook, where the woodman's axe has been withheld for a number of years, that one can obtain a presentable specimen, as these trees do not flower until, " with lichens silvery grey," the bark has attained the same hue as the leaves.

Leaving this brook to pursue its tortuous course through some beautiful green fields, we proceeded by a nearer route to the spot where it passes under the turnpike road; and having recrossed this *via intermedia* of our course, we again traced up the brook to the rich botanical habitat known by the name of the Seven Springs.* Here the water gushes out from several places at the base of an oolitic hill, tossing and leaping in wild tumultuous joy, as if well pleased to escape from its rocky cave into the light of day, and a glorious day it was that shone upon the liquid crystal at the time of our visit. These waters, at a short distance from the base of the hill, run over a largish surface of tolerably level ground, forming a kind of swamp or bog, bounded on one side by the Windrush, whose waters these springs considerably augment. The botanist who is not afraid of wet feet, or the chance of the occasional disappearance of a leg or so in the depths of a quagmire, and few ardent spirits mind such trifling mischances, will find himself amply rewarded by diligently examining every inch of this slippery place; for though it was so late in the year, we discovered the following plants during our short visit.—

Blysmus compressus
Carex vesicaria
Hydrocotyle vulgaris
Marchantia polymorpha
Menyanthes trifoliata
Parnassia palustris
Pedicularis palustris
Pinguicula vulgaris
Scutellaria galericulata
Triglochin palustre

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* These Seven Springs must not be confounded with those on the Cirencester road, which are said to be the source of the Thames. Our country people are very fond of calling by this name all places where the water gushes forth from a number of small channels.

A few yards farther on, in the spring or early summer, was to be found that rare plant Thlaspi perfoliatum; and this is now perhaps the only locality for it in Britain, as I am given to understand that the rapacity of unprincipled collectors has nearly or quite destroyed it in its old habitat at Burford quarries. Two years since, on another of the small hills beyond the one at the base of which we have been tarrying so long, I gathered a plentiful supply of Anemone Pulsatilla; and at the same time I accidentally stumbled on the Thlaspi. In the vale below, on the brook side, is our only habitat for Saxifraga granulata.

Leaving this most interesting spot we pursued our journey to the large and opulent village of Bourton-on-the-Water, plucking on our road a few specimens of Anthyllis Vulneraria and the pretty little Geranium columbinum; which latter plant, associated with Acinos vulgaris, occurs plentifully on all our hilly lands which have been subjected to cultivation.

Next morning we had to await the ending of a thunder-storm before we could resume our wanderings; and then, having to pass over a considerable tract of country which we had already examined, we hired a vehicle to convey us to the woods between Bourton and Winchcombe, having previously fixed on the latter place as the termination of our second day's journey. On arriving at Guiting woods we left the chaise and proceeded a little distance along the lane, the grassy sides of which were thickly strewn with Gentiana Amarella; this species is very abundant all over the hills, but I have never found Gentiana campestris in this neighbourhood.

Having fairly entered into these woods we made it a point to trace up the Windrush to its source, expecting to meet with a picturesque wood scene, and perhaps find some good plant, which might be accurately localized from growing in such a situation. In the former expectation we were disappointed, as the spring rises out of a swampy piece of ground, and presents nothing remarkable; but three grasses amply satisfied us on the latter score, these were Elymus europæus, Calamagrostis epigejos and Poa nemoralis, all three of rare occurrence here. Alchemilla vulgaris was very fine; this plant is not common here, while A. arvensis is found everywhere. Rhamnus catharticus and Viburnum Lantana were observed in this wood; and the grassy glades in the wood and fields around were thickly studded with Colchicum autumnale. This plant is very plentiful all over the Cotteswolds, and even in the vale we have whole fields of it: the roots and seeds of the Colchicum are collected in great quantities from this neighbourhood, for the London physic-market, as the plant still holds a high reputation for the cure of gout and rheumatism.

The above are some of the most important plants seen by us this day, the grass having been so wet as to prevent our examining the country with the requisite industry and circumspection; moreover, we were rather anxious to reach the old-fashioned town of Winchcombe, whither our friend the General had preceded us. Soon after emerging from the wood we fell upon a large stone-quarry, which of course claimed a share of our attention. And this reminds me that I have not yet said anything on the geological construction of this neighbourhood, a subject which I consider highly important to the proper illustration of the Botany of a district; perhaps therefore the following remarks may not be deemed out of place.

The vale of Gloucester is composed of the blue clays and marls of the lower lias formation, presenting us with all the fossil remains peculiar to this formation, such as the Ichthyosauri, many Ammonites and bivalve shells, and occasional remains of plants. This bed of lias clay is occasionally covered to the depth of from 20 to 30 feet with fine sand, especially in many parts upon which the town of Cheltenham is built, the greater portion of which deposit is derived from the neighbouring hills by which the vale is bounded on its eastern extremity; on tracing up the escarpments of these hills we meet with the following beds, namely, the middle lias or lias marlstone, the upper lias, corresponding with the alum shale of Yorkshire, immediately on which rests the inferior oolite, which forms the greater portion of the Cotteswold hills. And it should be remarked that although the members of the lias formation make up the greater portion of the acclivities by which the higher hills are approached, still these slopes are so thickly covered with the débris from the oolite which forms the upper stratum, as to render this, so far as the Botany is concerned, a district of oolitic limestone, whilst the vale, as I have before remarked, offers us the stiff clays of the lias. And here I would refer my readers to an article by Mr. Spruce (Phytol. 101), and it will at once be seen that notwithstanding this neighbourhood and Yorkshire are so much alike in lithological character, scarcely two plants of the same species were found in the three days' ramble of the two parties, plainly showing that in these instances we must seek for some other causes of variation besides the soil, of which altitude and climate may require some consideration. It may be worthy of remark that our highest elevation is little more than 1000 feet.

After duly examining the quarry which has led us into the above geological dissertation, we proceeded on the even tenour of our way along the lane, the banks of which were thickly strewn with that everywhere found and universal favourite, the harebell, intermixed with Gentiana Amarella and the common Hieracium Pilosella. Having arrived at the Tracey Arms at Winchcombe, and packed up a hamper of specimens, we refreshed ourselves, and then finished the second day's ramble with an examination of the fine ruins of Sudely Castle, whence we gathered, as a memorial of our visit, that constant attendant on old ruins, Cheiranthus Cheiri.

Notwithstanding certain gloomy appearances the previous evening, the early dawn of our third day was as favorable as one could desire. The sun, at rising, was shrouded in clouds of mist—a sure indication of a fine day; these being gradually dispelled, he soon shone forth in all his splendour, the fierceness of his rays being tempered by a delightfully refreshing breeze. Early on a morning of such promise did Mr. Lees and myself once more wend our way to the Cotteswolds, this time with the intention of examining their western escarpment. Proceeding from the town of Winchcomb towards Postlip, near the paper-mills, we fell in with a tree of Rosa sarmentacea; the greater stoutness of the stems, its more compact mode of growth, with the larger bright scarlet fruits of this rose, distinguish it at first sight from Rosa canina. In the same hedge-row were some fine trees of Salix Russelliana; and further on, nearer the mill, great quantities of Lathyrus sylvestris presented themselves. At the once stately mansion called Postlip Hall, we spent a little time in sketching the beautiful Norman arches of a ruined chapel. Immediately below the chapel, on the banks of a hill rivulet, we met with Triglochin palustre, Blysmus compressus, Spergula nodosa, and quantities of Valeriana dioica; and following this little stream up a ravine, we were soon presented with some fine specimens of Polypodium calcareum, and on the side of the hill to the left were some splendid plants of Atropa Belladonna in fine fruit. We then passed over Cleeve Clouds in the hope of finding Astragalus hypoglottis, as I had seen a specimen from thence, but in this we were disappointed; however, in examining a field covered with Calluna vulgaris, we were amply rewarded by securing many specimens of Gnaphalium sylvaticum. We next examined the cliffs overhanging Queen Wood, which look down upon Lord Ellenborough's seat at Southam; the crevices of the rocks afforded Asplenium Trichomanes and Ruta-muraria, and on some of the masses of stones were Myosotis collina, Solidago Virgaurea, and young plants of Verbascum nigrum. Upon penetrating into the wood below, we were soon in active employment securing the most beautiful specimens of Convallaria Polygonatum in fruit, in searching for which we saw whole patches of C. majalis. Rosa villosa, Viburnum Lantana and Opulus, Rhamnus catharticus, Conyza squarrosa and Campanula glomerata also claimed a share of our attention; but the greatest prize in this rich spot is Rubus saxatilis, and of course upon seeing it we were very anxious to secure specimens in fruit, as it simulates the young state of R. cæsius so much, as to render it a matter of great difficulty to distinguish them. After looking for some time in the thickest part of the wood without finding the wished for *red drupes*, we directed our attention to the more open parts, where we found some specimens in very fine fruit, with the drupeolæ few, large and red. And here we observed a somewhat curious fact, which is that such plants as had runners were without fruit, while those in fruit were stronger, partially woody, but destitute of runners. After collecting *quantum suff.* of these rare plants, we were bending our steps homewards towards Cheltenham, when my friend Lees became very anxious to visit a beech-grove then in sight; and though we had been thirteen hours on the wild hills with only a biscuit between us, I was fain to yield to his wishes in the hope of finding Monotropa Hypopitys, which we did find, and I am quite sure the readers of 'The Phytologist' will share in our pleasure and gratification in so doing, in reading the elegant paper by Mr. Lees, detailing his investigation into its parasitic nature, (Phytol. 97). After securing an abundance of the Monotropa in fruit, and also some fine specimens of Epipactis grandiflora in the same state, we set our faces homeward in real earnest, and soon arrived well satisfied with our sport, and inwardly resolving never to let a season pass without having a Natural-History expedition on the lovely Cotteswolds.

JAS. BUCKMAN.

Cheltenham, December 14, 1841.

ART. XLVIII. — *A List of Plants met with in the neighbourhood of Swansea, Glamorganshire.* By J. W. G. GUTCH, Esq.

(Continued from p. 121).

Echium vulgare. Near the Infirmary and on Town Hill.

Pulmonaria officinalis. Found by Dr. Turton in woods between Neath and Pyle, (Dillwyn).

Lithospermum officinale. At Park, near the Mill.

——— *purpuro-cæruleum.* Abundant in several places on the coast of Gower, particularly in Nicholston Wood, and about the top of the cliffs in Caswell Bay. It has also been found on a rocky bank near Newton-juxta-Pyle, by the Rev. J. M. Traherne, and in other places in that neighbourhood by Mr. Bicheno.

Borago officinalis. Near Port Tennant and Cadoxton.

Lycopsis arvensis. Near Port Tennant.

Anchusa sempervirens. At Baglan, near Neath, and about the ruins of Neath Abbey, (Dillwyn).

Myosotis cæspitosa. Near Singleton.

——— *arvensis*. Common.

Cynoglossum officinale. Side of road to the Mumbles, common; Cromlyn Burrows.

Convolvulus arvensis. Sand hills, common.

——— *sepium*. Common in hedges. The var. *incarnata* also occurs on the road to Dan-y-graig, and in hedges between Wych-tree bridge and Neath, and about Penrice.

——— *Soldanella*. Sand hills; Mumbles Road and Cromlyn Burrows.

Plantago major, *media*, *lanceolata* and *Coronopus*.

——— *maritima*. Neath canal. On the rocks and sandy shores in Langlan, Caswell and other Bays. Mylate friend the Rev. Hugh Davies, in his 'Welsh Botanology,' p. 16, says that the Welsh call it "Bara can y defaid," and "Sampier y ddafed," and that these names, and the almost miraculous properties which this plant possesses for fattening cattle, have been erroneously attributed to Salicornia herbacea by Pennant, and to Crithmum maritimum by Withering, (Dillwyn).

Armeria maritima. Mumbles light-house and coast.

Statice spathulata. Gower.

Ligustrum vulgare. In hedges.

Andromeda polifolia. On Cromlyn Bog, chiefly towards its northern extremity, until the drainage took place. A quadrifid octandrous flower sometimes occurs on the same plant with others that are decandrous, (Dillwyn).

Calluna vulgaris, and var. *alba*. Kilvey Hill.

Erica Tetralix, and var. *alba*. Town Hill and Pennard.

—— *cinerea*, and var. *alba*. Kilvey Hill.

—— *vagans*. Mr. Thomas Milne, a botanist not likely to be deceived, told me that he had seen specimens which he knew had been gathered on a heath somewhere near Pontardulais, but I have never been able to find it. I was also assured by Dr. Turton, that a wild specimen of Erica mediterranea had been brought to him, which was gathered in the same neighbourhood, (Dillwyn).

Vinca major. Plentiful about Park Mill and some other places, but I have never found it in any place to which it might not probably have strayed from some neighbouring garden, (Dillwyn).

Erythræa Centaurium. Between Swansea and Port Tennant, and common round Swansea.

——— *linariifolia*, (*littoralis*, Hook.) On the down above the Mumbles light-house.

——— *ramosissima*, (*pulchella*, Hook.) In great abundance in a field near the Infirmary, and at Salt-house Point. Abundant on Cromlyn Burrows, where I have also found a plant which very well answered to Sowerby's figure of Chironia littoralis, and I much doubt whether either of them is more than a starved plant, or variety of E. Centaurium, (Dillwyn).

Chlora perfoliata. Road near Neath; frequent in Gower; between Drymma and Gwernllwynwith, and some other places.

Menyanthes trifoliata. In great abundance on Cromlyn Bog, Fairwood Moor, &c.

Datura Stramonium. Occasionally found on rubbish-heaps, (Dillwyn).

Hyoscyamus niger. Frequent in Gower, Cromlyn Bog, and by Neath Canal.

Verbascum Thapsus. Singleton and Mumbles road.

——— *Blattaria*. Singleton Marsh and several other places round Swansea; at

Neath Abbey, and by the road side between Taybach and Maryam. Though rather out of this district, it has also been found by Mr. Edward Hawkins on the road side three miles from Pyle, towards Cartridge, and in the lane leading to Pwllywrach. Another species, allied to V. Blattaria, which I believe has not yet been admitted into the British Flora, for many years grew freely with Œnothera biennis, on the sand hills in front of Cambrian Place, but by the enclosure of the Burrows it has probably been destroyed, (Dillwyn).

Atropa Belladonna. In a hedge above the Mumbles; also said to grow near Oystermouth Castle. Mr. Dillwyn observes that he has never seen it nearer to Swansea than Llandaff; Mr. Flower, of Bath, however, found two specimens in 1839, near the Mumbles.

Glaux maritima. On the sand hills opposite Cambrian Terrace.

Lysimachia vulgaris. Banks of Neath Canal.

——— *nemorum.* Hedges near Port Tennant.

Anagallis arvensis. Common. The var. *β. cærulea*, and another beautiful variety, nearly white, with a pink eye, have been found near Pentlegare by Mr. D. Llewellyn, (Dillwyn).

——— *tenella.* Near Singleton.

Samolus Valerandi. Neath Canal.

Utricularia minor. Llandwr Marsh.

Veronica Anagallis. Near Park and Pennard; lane from Mr. Vivian's to Sketty green.

——— *Chamædrys.* Near Penllergare; M. Moggridge.

——— *serpyllifolia*, *arvensis* and *polita.*

Rhinanthus Crista-galli. Town Hill and Cwmbola.

Pedicularis sylvaticus. Near Cromlyn Bog; Penllergare.

——— *palustris.* Penllergare, Cromlyn Bog and Fairwood Moor; common.

——— ——— var. *alba.* Cotremia, near Penllergare, Fairwood Moor, &c.

Bartsia viscosa. About Drymma, where it was first found by Mr. Edward Hawkins. It also grows plentifully in marshy fields in Cromlyn Dingle, on the left of the old road between Swansea and Neath, and other similar places, (Dillwyn).

——— *Odontites.* Kilvey and Singleton, common.

Euphrasia officinalis. Common.

Linaria repens. Ballast-bank, Britton Ferry; and plentiful by the road-side in many places about Llandilo, Llangaddock, and Llandovery.

——— *vulgaris.* Fabian's Bay.

——— *purpurea.* By Mr. J. Thomas's, Hill House.

Digitalis purpurea. Hedges, especially near Singleton, in great luxuriance.

Scrophularia nodosa and *aquatica.* Singleton Marsh.

Orobanche major. Not uncommon in the neighbourhood; there is also another species, which answers nearly to the description of O. cærulea, but is of a dull reddish brown colour, (Dillwyn).

——— *elatior.* Under the castle-walls at Penrice, and other places in the neighbourhood.

Melampyrum pratense. Llandwr Marsh, Penllergare.

Verbena officinalis. Common.

Salvia pratensis. Gathered by Dr. Turton in limestone meadows about Port Eynon, (Dillwyn).

Ajuga reptans. Common.

Lycopus europæus. Cromlyn Bog and banks of Neath Canal.
Mentha rotundifolia. On the castle cliff at Penrice, and it formerly grew about Singleton, (Dillwyn).
——— *piperita.* Found by Dr. Turton in the town ditch, near Rutland Place, (Dillw.)
——— *arvensis* and *aquatica.* Cromlyn Bog and Kilvey Hill.
Thymus Serpyllum. Common.
Origanum vulgare.
Calamintha officinalis. Singleton Marsh.
——— *Acinos* and *Clinopodium.* Common.
Glechoma hederacea. Common.
Galeopsis Ladanum and *Tetrahit.* Common.
Lamium purpureum. Near the Ferry.
——— *album.* Common.
——— *Galeobdolon.* Penllergare.
Leonurus Cardiaca. At Kidwelly, found by Mr. E. Foster, (Dillwyn).
Stachys sylvatica and *palustris.* Fabian's Bay.
——— *palustris β. ambigua.* Kilvey Hill.
——— *arvensis.* Mumbles road.
Ballota fœtida? and var. *alba.* Near the Ferry.
Scutellaria minor. In moist meadows about Penllergare and Drymma, generally more common than S. galericulata, (Dillwyn).
Prunella vulgaris. Common.
Rumex Acetosa and *Acetosella.*
——— *scutatus.* Mr. Dillwyn has observed this plant for many years together, growing luxuriantly on a wall; and Mr. Bicheno has found it in similar situations about Cornelly, with as good a claim as Ornithogalum nutans,* Chærophyllum sativum and many others, to be placed in the British Flora.
Polygonum amphibium and *lapathifolium.* Common.
——— *minus.* Near the Ferry.
——— *maritimum.* Near Salt-house Point; near eastern pier.
——— *Bistorta.* In moist meadows, not uncommon.
——— *Persicaria, mite* and *Convolvulus.*
Salsola Kali. On the sea-shore, near the Ferry, with a variety.
Salicornia herbacea. Salt marsh near Neath canal.
——— *radicans β. fruticosa.* Said by Dr. Turton to grow about Salt-house point, (Dillwyn).
Chenopodium Bonus-Henricus. On the Worm's Head, where it is used as spinach, for which it is an excellent substitute; also near Neath.
——— *rubrum.* Near Singleton marsh.
——— *album β. viride.* Near Singleton.
——— *glaucum.* About St. Helen's.
Schoberia maritima. Salt-house Point, near the eastern pier, and the Neath Canal.
——— *fruticosa.* Port Tennant.

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* On the sandy sea-shore opposite the race-course on Cromlyn Burrows, and more than a mile from any sort of house or garden, Mr. L. L. Dillwyn has found a thriving young plant of Yucca gloriosa, and it has all the appearance of having risen from a seed which the tide had cast there.

Beta maritima. In great abundance in all the caves on the sea-coast of Gower.

Halimus portulacoides. Muddy shores on Cromlyn bog; Park and Pennard.

Atriplex patula. Between the Ferry and Port Tennant.

—— *angustifolia*. Near Singleton, and near Kilvey Hill.

Urtica urens and *dioica*.

Reseda Luteola, *lutea* and *fruticulosa*. Mumbles road, in a field near the Infirmary, and Singleton.

Euphorbia Helioscopia. Corn-fields.

—— *Cyparissias* I believe this also has been found in the neighbourhood, but the only certain habitat that I know of in Glamorganshire, is the road-side near Duffryn. It has also been found between Cardiff and Pont-y-Pridd, where it was gathered by Mr. Woods, (Dillwyn).

—— *Paralias*. Common, especially about Pennard.

—— *portlandica*. About Caswell Bay. I have found it in abundance near Pennard, on the coast.

—— *exigua*. Sketty.

Mercurialis perennis and *annua*. Pennard Castle.

Betula alba var. *heterophylla*. By Morris Castle.

—— *alba* var. *mollis*. About Gwernlenwith.

Alnus glutinosa. Near Singleton and Cwmbola colliery.

Salix Russelliana, *vitellina*, *triandra*, *aurita*, *aquatica*, *cinerea*, *fusca*, *β. repens*, *δ. fœtida*, *ζ. argentea*.

Populus alba, *tremula*, *nigra*.

Quercus Robur. Common.

—— *sessiliflora*. Kilvey Hill.

—— *Cerris*. There were formerly several, there are now two or three, large trees growing in the woods by the lime-kiln near Aberdylais; and I have reason for believing that some acorns of this species were planted about this neighbourhood not very far from a century ago, (Dillwyn).

Corylus Avellana. Cromlyn Bog.

Juniperus communis. Gower.

Taxus baccata.

Myrica Gale. Cromlyn Bog.

Callitriche autumnalis. Near Neath and Gwernllwynwith.

—— *vernalis*. Common.

J. W. G. Gutch.

(To be continued).

Art. XLIX.— *Varieties.*

100. *Note on Lycopodium inundatum.*[*] I have this day been looking on Esher Common, with the last number of 'The Phytologist' in hand, for Lycopodium inundatum, and have found it in tolerable abundance; but as on close inspection I find its habit as to branching to be more than occasional, I venture to send you a specimen, and to state what appears to me to be the normal mode of growth. In several plots of ground which have been pared not very long ago, perhaps three or four years, I endeavoured to trace the old branch of the Lycopodium, and almost invariably, where I

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[*] In a letter to E. Newman.

was able to do so, found it remotely connected with another old branch at a wide angle. I think I found as many recent stems forked as simple; and the latter, to my mind, appeared to form the exception, and not the rule. I beg to send this as a suggestion, which, I cannot help thinking, you will find, on investigation, to be founded in reality; for, according to my view, the stems are, as you say, prostrate, creeping, firmly adhering to the soil by means of their roots, but instead of being rarely branched, *with a tendency at length to become dichotomous*, the two branches then gradually growing at a wider angle from each other, perhaps until the angle is one of 70°. The old stems are all so much decayed that I was not able to secure a single one with its remote branch; but the specimen I send will show the incipient ramifications, the weaker of the two at a very obtuse angle. Centunculus minimus and Bidens cernua are both found on the common.—*W. H. Dawnay;* 30, *Upper Brook St., Sept.* 22, 1841.

101. *Curious form of the common Reed.* Should the botanist be tempted to ramble along the shore towards Puckaster, he can hardly fail to remark the very singular form of the common reed (Phragmites vulgaris), which abounds on the slipped banks of wet and almost semifluid clay, skirting the southern shores of this island. The only notice I can find of this curious prostrate variety of a species naturally quite erect, is in Ray's Synopsis, 3rd edition, by Dillenius, where, in the Indiculus Plantarum Dubiarum at the end of the volume, I remember to have read very long ago the then very puzzling announcement of a "Gramen arundinaceum 30 pedes longum. On the South of the I. of Wight by the sea-side towards the Point;" precisely the very station on which I first met with it, and calling to recollection the above quotation, which at the time of reading it only created a feeling of wonderment, the mystery was at once explained. Springing from the steep sides of these extraordinary land-slips, the roots interlacing in all directions just beneath the surface, may the common reed of our ponds and marshes be seen with its culms depending like long and slender ropes, or trailing in a straight or serpentine direction on the shingly beach or the smooth and level sand, and that without rooting at the joints, to the length of from 20 to 40 or even 50 feet. I have never observed the extremities of the culms to blossom under these circumstances, as indeed they could scarcely be expected to do with so exhausting a length of growth; the leaves too are very short, as if imperfectly developed, and occasionally a few radicles are emitted from one or other of the joints, but in general the plant lies quite prostrate and entirely unconnected with the soil from the root upwards, so that it may be wound about any object like a cord, without the least difficulty. The variety is very common on the slipped shore beyond Black-gang, and has been noticed since near Bembridge, by my zealous friend Dr. Thos. Bell Salter.— *Wm. Arnold Bromfield; Eastmount, Ryde, Isle of Wight, Nov.* 8, 1841.

102. *Staphylea pinnata.* The retention of Staphylea pinnata in our Floras seems continued in deference to the authority of Ray, in whose time it is said to have grown about Pontefract sparingly and not certainly wild. It is likewise mentioned by Merrett as found in "woods in the farther part" of the same county, and as a Yorkshire plant by Smith, on the authority of Saml. Hailstone Esq. of Bradford, but who now sees reason to believe himself mistaken in thinking it a native. The old writers, Gerarde and Parkinson, mention it, the former giving very suspicious localities for it in Lincolnshire, the latter, hedges about Ashford in Kent. In none of these stations has it been seen by any recent botanists. I am told it is plentiful in Arniston woods, near Edinburgh, but accompanied by the lilac, laburnum and other shrubs of foreign growth, plainly pointing out its extraneous origin. It is much to be regretted that our gene-

ral and local Floras should be burdened with stations actually *more than suspicious*, yet passed currently for truly wild localities, without allusion to or comment on their disputable character. The practice is one subversive of all progress in Vegetable Geography, a most interesting and delightful department of botanical science.—*Id.*

103. *Additions and corrections in the Scottish localities of Lycopodium inundatum*, (Phytol. 49). From the careful manner in which Mr. Newman is drawing up his interesting papers on the British Lycopodia in 'The Phytologist,' I presume he will excuse my pointing out a slight inaccuracy in that on Lyc. inundatum. He mentions two localities in this country, but they are really but one and the same station, and that a very circumscribed one, hardly two yards square, first observed by myself. Dr. Balfour, I know, never saw this Lycopodium growing in Nairnshire, and Dr. Greville I believe never was there; they have furnished him I suppose with copies of the tallies which accompanied the specimens they received from the station, so that it is not unlikely the mistake arose with myself; I shall give below the station more correctly described. This correction is so unimportant that I should not have troubled you about it, but that I can give you at the same time three other Scotch stations for this plant. Beginning at the most South-easterly station and going N.W., they would stand in the following order, which is also, I rather think, the order of their discovery.

Scotland. — Morayshire; at Hatton, on the confines of the parishes of Alves and Kinloss, *Mr. Geo. Wilson.* Nairnshire; near Lochlee, to the east of Nairn, *Mr. Jas. B. Brichan:* on moist heathy ground (now planted) between Budgate and Inchgettle, near Cawdor, *Mr. W. A. Stables.* Ross-shire; by the side of the path leading from Craigdarroch Cottage towards the Falls of Rogie, beyond Strathpeffer, *Mr. Geo. Wilson.* — *Wm. Alex. Stables; Cawdor Castle, Nairn, Nov.* 18, 1841.

104. *Lycopodium annotinum, Selago and Selaginoides.* The stations for Lycopodium annotinum may also be caried more to the northward, for I have a specimen of it from Ross-shire, given me by Mr. Geo. C. Smith; and I myself have gathered it (Aug. 3, 1833) on Freewater, a mountain in Sutherlandshire. In giving the stations for this species, you give Ben na *Mac* dhui, i. e. the Mountain of the Black Son, instead of Ben na *Muic* dhui—the Mountain of the Black Boar. I cannot however vouch for my Gaelic orthography, though it is nearer what it should be than yours. I shall give the stations whence I have specimens of Lyc. Selago and Selaginoides, though I fear too late for the papers on these species, at any rate for one. Lycopodium Selago.—Pennyghent Hill, Yorkshire; and Widdybank, Teesdale, Durham; *Mr. R. B. Bowman.* And I have gathered it myself in Glen Callader, and on Ben na Muic dhui, in Aberdeenshire. *Lycopodium Selaginoides.*—Coilmore, west of Ireland; *Mr. R. I. Shuttleworth.* High Force of Tees, Durham; *Mr. R. B. Bowman.* Hills round Ulleswater. And I have picked it in Glen Dole, Forfarshire.—*Id.*

105. *Notes on the Genus Tilia.* Notwithstanding the repeated discussion of the claims of our three species or forms of Tilia to be considered indigenous to Britain, and the adduction of many facts *pro* and *con*, no definite conclusion appears as yet to have been arrived at. In this undecided state of the question it becomes the duty of botanists to accumulate all the facts and observations within their power, bearing upon the subject at issue. With this view I forward the following statement of the appearance and occurrence of the genus in the Forest of Wyre, as communicated to me by Mr. George Jorden, of Bewdley. I should however premise that the present Forest of Wyre, which comprises an area of about fifteen or sixteen square miles, one

half in Shropshire and the other in Worcestershire and Staffordshire, is merely the remnant of a much more extensive forest, which, from ancient records, is well ascertained to have existed there in the earlier periods of our history, and consequently must be considered as an undoubted primitive or natural forest. Mr. Jorden writes as follows.

"The Tilias are thinly scattered over the Shropshire part, but in the Worcestershire portion they are abundantly spread over an extensive district, there being many entire copses of them. A loamy or sandy soil suits them best. By some eminent botanists the Tilias are not considered indigenous; I consider them truly so, if I may be allowed to differ from them in opinion, when founded on the results of my having traversed this forest in various parts, for upwards of three miles in a straight direction. I find *T. Europæa* and *grandifolia* very generally distributed in a great portion of Worcestershire, and but sparingly in Shropshire, in our native woods and hedges on the rocky declivities of the banks of the Severn, where they grow self-planted in shapeless masses. They prefer the light soils accompanying the new red sandstone formation, and have spread themselves over the stiff soils adjoining, but more sparingly. Even the oak, king and tyrant of the forest, has permitted the location of *Tilia Europæa* in the centre of the forest of Wyre, but *T. grandifolia* is not so plentiful. In our very old hedges, so interesting in those portions of the country which have been longest under cultivation, are faithfully recorded all our truly indigenous trees and shrubs, which were moved promiscuously from the contiguous wilds some centuries ago, and which will remain for ages yet to come, since by diminishing their stature their existence is apparently prolonged. In a very short space of such hedges I have noted the greater number of our native trees and shrubs, the undoubted tenants of our ancient forests, and amongst the rest *Tilia Europæa* and *grandifolia*. In plantations I perceive some Tilias which seem to differ from those which grow wild in our woods and hedges."

Mr. Jorden kindly accompanied the above interesting and instructive remarks with specimens, which on examination I found readily separable into three very distinct forms, identical with our three species:—*Europæa*, *grandifolia* and *parvifolia*. These, independently of any characters from the form, number, or clothing of the fruit, I perceived were easily distinguishable by the form and texture of their leaves. In *T. Europæa* and *grandifolia* the leaves were of a thin membranaceous substance, of a bright transparent green, paler on the under surface, and with very unequal bases. In *Europæa* the serratures of the margins were finer and sharper, their apices pretty generally directed towards the point of the leaf; whilst in *grandifolia* the serratures were larger and coarser, their apices patulous or spreading in all directions. The nervures of *T. grandifolia* on the under surface were ciliated or hairy; those of *Europæa* being glabrous, except at the axils. In *T. parvifolia*, on the contrary, the leaves were of a thick coriaceous texture, of an opaque green on the upper surface, but peculiarly and most markedly glaucous beneath, and with very equal and deeply cordate bases. The serratures of the margins were large, coarse and patulous, having a strong tendency to become lobed in the upper portion.—*W. A. Leighton; Shrewsbury, December* 22, 1841.

106. *Notes on Monotropa Hypopitys.* In reference to the question of the parasitical habit of Monotropa (Phytol. 43), I may state that I have had an opportunity of studying it this year in rather favourable circumstances. It grows on the Lancashire coast, near Southport, among Salix argentea, on the roots of which it was *supposed* to be parasitical. With a view to ascertain this, I was supplied in August last with a plant

carefully cut out in the sod, by the original discoverer (Linnæus Aughton of Southport), through the kindness of my friend Dr. J. B. Wood, of Manchester. Notwithstanding the apparent facilities for laying bare the root of the plant, the soil consisting of mere sand, it was not an easy task to separate the extraneous matter from the subject of enquiry, and at the same time to preserve the connexion, if any, that might exist between the root of the Monotropa and that of the Salix included in the sod; but having bestowed considerable care on the process, I feel warranted in stating that the plant *is not a parasite.* The root seems to consist of a number of branched tubers, whose extremities are not attenuated, but obtuse. My idea of the tuberous nature of the root, is founded on the fact that young buds are found immersed in the substance of the cylindrical ramifications, destined, I presume, to become future branches, which grow out at right angles from that on which they are fixed. If spongioles exist at all, they must be sought for at the extremities of the ramifications. It may be as well to state that the individual examined possessed a rudimentary stem, which had all the appearance of being a successive growth for development at a future season. The position of this embryo stem was somewhat peculiar, pointing downwards. I believe the plant to be entirely destitute of stomata: it also differs materially from Lathræa in its economy, having nothing whatever analogous to the subterranean leaves of that plant.

Since writing the above I have read the paper by Mr. Lees, —'On the parasitic growth of Monotropa Hypopitys,' (Phytol. 97); and whilst I admit that my researches, however carefully conducted, afford only *negative* proof, I think it must be granted that neither the drawings nor the observations of Mr. Lees are conclusive, and that the affirmative evidence of the parasitism of Monotropa, amounts to no more than *probability*. Moreover, I cannot avoid the inference that the investigation has not been conducted with that care and scientific skill which the subject demands; for nothing like microscopic dissection appears in Mr. Lees' drawings, and the mere application of a lens will not solve the mystery. In my deliberate judgment the "fleshy clustered radicles" mentioned in the foot-note at p. 100, form the proper and the only root of the plant; and some of Mr. Lees' remarks confirm this opinion. In the Southport plant examined by me, there was indeed a very close investment of the root, nearly like that described by Mr. Lees; but my inference was that it consisted of the woolly matted extremities of the grasses which grew with the Monotropa: be that as it may, I succeeded in detaching it from the roots of the latter, with as much ease as such a coat might be expected to permit, and when detached there was no appearance of laceration or "solution of continuity" between it and the root which it had encased. Some idea of this coating may be gathered from the cloth-like arillus of the seed of the tamarind. I will now briefly state what I myself observed at variance with the position laid down by Mr. Lees.

1st. That the mass composing the root of the Southport Monotropa had a white covering of a matted and somewhat woolly substance, supposed to proceed from the radicles of the grasses which grew with it. Under the microscope, and after careful anatomical examination, I could not find the least trace of organic connexion between this coating and the root of the Monotropa.

2ndly. That there was not even *contact*, much less parasitical connexion, between this white coating and the roots of the Salix contained in the sod.

I may here mention what were my perceptions as to the scent given out by Monotropa. Mr. Lees confirms the account given by Smith, and it would appear that a primrose-like scent exhales from the plant, even when in seed. Fresh flowering plants from Southport were quite inodorous to me until they had lain some time in paper to dry; they then gave out a scent very similar to that of a raw potato, and I took care to have the fact confirmed by other people's noses. I may also mention that Monotropa has not been accurately described either by Smith or Hooker. What the former alludes to as smaller and interior petals, in reality constitute the *calyx*, and are inserted on the *outside* of the true petals, which have cucullate bases projecting farther back than the point of insertion: hence the mistake into which Smith has fallen; the petals therefore are but 4 or 5, and the leaves of the perianth corresponding in number. The hollow channelled stigma and style of Monotropa may be considered very favourable for exhibiting the pollen-tubes; with a small hooked needle they may be drawn out from a longitudinally divided style in considerable masses, each pollen-tube having the same diameter as the grain of pollen at its summit. — *W. Wilson; Warrington, December* 23, 1841.

107. *Adiantum Capillus-Veneris in the Isle of Man.* During the summer of 1841, and but a short time previous to the date of Mr. Clark's notice (Phytol. 89), I had occasion to visit the Isle of Man; and foremost among the objects of attraction in the island was Adiantum Capillus-Veneris at Glen "*Meay*," to see which, and the ruins at Peel, a day was set apart. We were soon rolled across the island from Douglas, and having wandered musingly for some time among the venerable ruins of Peel Castle, I proceeded to the extensive quarry of old red sandstone in the neighbourhood, and thence directed my steps to "the Glen," which, after some trouble, I found. The plantation was entered through a gap in the hedge-row, and following a narrow path through the trees, I gained the brook-side about twenty yards below the fall; with some difficulty I made my way, on the right hand side of the brook, to the basin, and having leaped the stream, I found good footing on the extended gravel bed of the brook, which was bounded by a precipitous bank of rock, but certainly in no way deserving the appellation of a cave. It was in the crevices of this rock that I first observed the Adiantum, and here I found only about four almost leafless plants; fearful lest this might be the only spot on which it grew, and deprecating, with Mr. Newman, everything like botanical ravages, I made some further examination before any specimens were gathered, and for the satisfaction of Mr. Clark and others I can state that there is no need of doubt respecting its continuance, for in the course of my search, which was continued as far as I could manage to get along the left bank, I found young plants, intermingled with a few more mature ones, in tolerable quantities, though it required some examination where the fronds were gone, and they were fast decaying, to discover the roots of the fern. Furthermore I may add that the finest root I saw, perhaps the parent of the whole, was high above the waterfall, and perfectly inaccessible; this it was that left in my mind no fear of its eradication, I therefore gathered the few roots I first saw, leaving little *there* behind me. Such however was the state of these roots that they only supplied about seven green fronds; they are doing very well in cultivation. The difficulty of discovering the frondless roots was perhaps, also, in some measure, the cause of Mr. Clark's disappointment; but surely, to carry away the only root to be found, is not the best method of rendering authentic a dubious locality.—*Thos. G. Rylands; Bewsey House, Warrington, December* 24, 1841.

108. *Objection to the Alphabetical Arrangement of Local Lists of Plants.* Mr. Editor, will you allow me to make public (in the same periodical) an individual protest against a recommendation made by the reviewer of the second edition of the Catalogue published by the Botanical Society of Edinburgh, (Phytol. 109). The reviewer

very judiciously recommends the adoption of that Catalogue as a general standard of nomenclature; and with that recommendation I would most cordially concur, notwithstanding an opinion that some of the names will be again changed in a third edition. But the reviewer extends his recommendation farther than this, by suggesting the expediency of botanists adopting the alphabetical arrangement in publishing local lists of plants; and it is against this latter part of the recommendation that I would offer my single protest; knowing well, from long and frequent experience, the extreme inconvenience of consulting such alphabetical lists. It is absolutely necessary for distributing societies to have a fixed series of names, to facilitate the tedious processes of sorting their specimens, and of supplying the desiderata-lists of applicants; and the alphabetical order certainly offers many advantages for this special purpose. It is much otherwise when the general objects of science are concerned, and individual students or writers require to consult numerous books and lists of plants, published at different periods, or in different countries. Uniformity of names is out of the question under these circumstances; and any arrangement by which similar plants are brought together becomes better than an alphabetical one, in which similar names only can be brought together, and where a difference of name of course destroys the regularity of the series. I am now engaged in preparing for the press a somewhat voluminous work on the distribution and localities of the plants of Britain, and have found it so very inconvenient to make references to alphabetical catalogues, or even to consult them, as to have felt strongly disposed to draw a line of distinction between the alphabetical and arranged lists; rejecting the former as unsuitable for the purposes of science. I find that with one, or at most two exceptions, this line of distinction would throw out only the inaccurate lists of inexperienced and incompetent botanists; but as it would be wounding the feelings of others without any necessity for doing so, did I give examples of this, it is better to refrain. Those who have had half as frequent occasions as I have had, to consult lists of plants published in this country, will easily supply examples from their own recollections. The internal evidence afforded by the Catalogue reviewed, clearly indicates the individual author of the altered nomenclature; and we do not find him publishing local lists alphabetically, when the general purposes of botanical science are in view, though he has printed some highly interesting and valuable lists of that class.—*Hewett C. Watson; Thames Ditton, January* 5, 1842.

109. *Additions to the Flora of Moray.* Mr. Stables (Phytol. 132) records an interesting addition to the published Catalogue of Moray plants. Perhaps it may be worth while to add two other species observed by myself within the same district last summer, as the non-mention of any plant in a local Flora is a sort of negative evidence against its existence in the tract. The two species are Allosorus crispus and Carex saxatilis; the former growing in plenty on a stone wall near the toll-bar at Dalwhinnie; the latter in a mountain corri, about five miles eastward of the same place, and at an elevation rather exceeding 2,500 feet.—*Id.*

110. ***Erratum.*** Phytol. 133, line 26, *for* 1779, *read* 1799.

ART. L.—*Proceedings of Societies.*

BOTANICAL SOCIETY OF LONDON.

January 7. John Edward Gray, Esq. F.R.S., President, in the Chair. The following donations were announced. British Plants from Dr. Streeten, Dr. Young, The Rev. Gerard E. Smith, Miss S. Foster, Mr. Gutch, Mr. Edwin Lees and Miss E. Harvey. Mr. W. A. Leighton presented specimens of *Tragopogon minor* (Fries), found in Shropshire. Mr. James Ward presented specimens of *Lecanora rubra* and *Ribes spi-*

catum (Robson), found in Yorkshire. A specimen of *Poa Borreri* was exhibited, collected by The Rev. G. E. Smith, at Lymington; which, although presenting the characters of that species, actually exhibited in two panicles a strong tendency to the reflexion of the adult branches, as in *Poa distans*. Mr. Adam Gerard presented some interesting plants from Sierra Leone, collected by Mrs. Blyth. The Society had also received a large collection of foreign mosses from Dr. Muhlenbeck; and specimens of *Seseli Libanotis* collected in Herts, by The Rev. W. H. Coleman. Books had also been presented by Mr. Gutch, Mr. Luxford, Mr G. Rich, and the Shropshire Natural-History Society. A letter was read from Dr. Nees Von Esenbeck, thanking the Society for electing him a foreign member.

A paper was read from Edwin Lees, Esq. F.L.S., "On the Flora of the Malvern Hills, and the surrounding District, in Worcestershire, Herefordshire and Gloucestershire," (accompanied by an excellent map illustrative of the stations of plants). The author observed that the Malvern Hills, in an undulating narrow ridge of nine miles in length, running very nearly due North and South, form "a great back-bone" between the counties of Worcester and Hereford, while Gloucestershire joins the two former counties at the extreme Southern end of the chain. The mass of syenite itself, of which the hills geologically consist, is so narrow that but little advantage would be gained by attempting to note the plants of the *Hills* irrespective of the *District around them*, most of the rarer plants in fact occurring rather in the valleys or at the base of the chain, than on the rocky summits themselves.

Mr. L. proposed to trace the vegetation of the district in three divisions, which will accord as well with the superficial aspect of the country as with its geological character; and it will then be more readily seen what influence (if any) the nature of the soil exercises upon the habitats of the various plants found within its boundaries.

The first division comprises the flat country eastward of the hills to the Severn, whose course, setting aside curvatures, is nearly parallel to the Malvern chain, the distance from the river varying in the space between Worcester and Tewkesbury, from five to about seven miles. The whole of this plain consists of red marl, with deposits of diluvial gravel in various places close to or to within short distances of the river. To the South of Upton several isolated hills of lias limestone occur, and North of that town various tabular or rather roof-shaped hills of red marl, more or less covered with wood, run parallel with the Severn, and beautifully diversify the scene. Even nearer the hills, especially southwards, many fortress-like eminences start up in a picturesque manner, and, robed with foliage, greatly relieve the tame flat that would otherwise present itself. The drainage of the whole district is received by the Severn, even from the limestone on the western side of the ridge; for the Ledden, that, flowing past Ledbury, collects the streams from the southward, after a further course of ten or twelve miles flows into the Severn at Gloucester. Throughout the whole eastern plain no lake or even pool of any striking dimensions occurs, but the streams that flow from the hills in the direction of Eldersfield, the Berrow and Longdon, being precluded from reaching the Severn directly by the intervention of steep banks of marl, and having only one outlet to that river with scarcely any fall, necessarily accumulate in the flat meadows, forming marshes of considerable extent and entirely overflowed in the autumnal season. Many efforts have been made to drain these marshes, and deep ditches beset them on every side; but having only one sluggish outlet, and being in fact in many places below the level of the bed of the Severn, it appears impracticable to provide an adequate drainage for them. However, the boundaries of the marshes have doubtless been much restricted of late years, for Mr. L. was informed that within the memory of persons still in existence, the ague was a common complaint in all the neighbouring parishes, but is now almost unknown; and the author had met with men who could tell tales of thirty years ago or more, when the *ignis fatuus* or wild-fire has led them a strange midnight dance, though now unseen for many a day.

Mr. Lees proposed to treat of the two other divisions in future papers; and the present paper concluded with a copious list of habitats, and specimens of all the plants (many of which were exhibited) are deposited in the Society's herbarium: and it is the intention of Mr. L. to send the Society specimens of all the plants (including Cryptogamia) in the Malvern district.

The following are the habitats of some of the interesting plants.

Isatis tinctoria: On a precipitous cliff of red marl forming the left bank of the Severn, immediately opposite Sarn Hill, at a place called the Mythe, one mile North of Tewkesbury, and a few hundred yards from the new iron bridge over the river. Mr. L. had noticed this plant here for above twenty years. *Koniga maritima:* Near the chalybeate well, Great Malvern: found in August 1841. *Vicia Bithynica:* In a field East of Malvern Wells, between the Admiral Benbow and Benbow's Farm-house. In the original edition of 'English Botany,' Dr. Abbot is said to have gathered it a few miles to the North of Great Malvern. *Smyrnium Olusatrum:* On the red marl cliff at the Mythe Tout above Tewkesbury, close to the Severn, where some underwood extends up the acclivity. *Iris fœtidissima:* On Sarn hill, near Forthampton, very luxuriant. Also at Cruckbarrow, South of Worcester, and on the Berrow hill, two miles from the southern end of Malvern chain eastwards. *Crocus vernus:* Battenhall, a little South of Worcester. *Dipsacus pilosus:* Below the Abbey, Malvern, eastward, and Bubble Brook, Worcester. *Verbascum Blattaria:* Forthampton, and between that place and Longdon. *Senecio squalidus:* Old buttresses, Worcester. *Delphinium Consolida:* On the border of Welland Common. *Helleborus fœtidus:* Cotheridge. *Ornithogalum umbellatum:* Cotheridge, between Worcester and Malvern.—*G. E. D.*